EDITORIAL

How should GPs test for dementia?

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MOST OF THE ALTERNATIVE DEMENTIA SCREENING TESTS PERFORM AS WELL AS THE MINI-MENTAL State Examination (MMSE), a systematic review and meta-analysis has found.[1]

Diagnostic performance studies were identified by searching healthcare databases. Studies were eligible for inclusion if the screening tests were conducted by a face-to-face interview and if dementia was defined by standard diagnostic criteria.

Of the 149 studies included in the meta-analysis, covering more than 49,000 participants, just over two thirds (102) used the MMSE. Ten other screening tests were also evaluated.

The MMSE had a pooled sensitivity and specificity of 0.81 (95% CI: 0.78-0.84) and 0.89 (95% CI: 0.87-0.91) respectively.

Of the alternative tests, the Mini-Cog and Addenbrooke's Cognitive Examination-Revised (ACE-R) were the most accurate tests with performances comparable with the MMSE (Mini-Cog: sensitivity 0.91, specificity 0.86; ACE-R: sensitivity 0.92, specificity 0.89).

The alternative tests were less good at identifying mild cognitive impairment: subgroup analysis showed that only the Montreal Cognitive Assessment was comparable with the MMSE (sensitivity 0.89, specificity 0.75).

The MMSE is not recommended as a dementia screening tool in primary care as it takes 10 minutes to administer, is influenced by education, language and cultural background, and is now subject to copyright. A previous review recommended use of either the General Practitioner Assessment of Cognition (GPCOG, 6 minutes), the Mini-Cog (3 minutes) or the Memory Impairment Screen (MIS, < 5 minutes).[2]

The Alzheimer's Society toolkit, supported by the Department of Health, recommends initial assessment with the question: 'Has the person been more forgetful in the past 12 months to the extent that it has affected their daily life?' If the answer is yes, it suggests that the Mini-Cog can be used as an optional second part of the initial assessment. When the initial assessment suggests there may be a problem, they recommend use of the GPCOG to detect cognitive impairment.[3] This approach is not supported by the present study which found that the Mini-Cog appears to be a better screening tool than the GPCOG.

Regardless of the screening tool used, the prevalence of dementia is too low to justify population screening. For people aged 65-69 the UK prevalence is 1.3%;[4] using the Mini-Cog this gives a PPV of 0.079 i.e. 92 out of 100 with a positive result will not have dementia. The PPV does improve with increasing age but even for those aged 80-84 (UK prevalence 12.2%),[4] the PPV is only 0.475 i.e. more than half the positive results will be false positives.

'The Mini-Cog appears to be a better screening tool than the GPCOG'

The NHS England Dementia Identification Scheme attempts to get round this problem by targeted screening of high-risk patients e.g. patients aged 60 or over with cardiovascular disease or diabetes.[5] Patients with diabetes are 1.6 times more likely to develop dementia[6] which means that the PPV for those aged 65-69 will still only be 0.122.

The arguments in favour of dementia case finding are that it facilitates timely diagnosis, treatment and access to support; and gives patients the opportunity to participate in advanced care planning before they lose capacity.[5]

The arguments against case finding are:

- There is a high false-positive rate
- Nearly half those with positive results on screening refuse further assessment[7]
- The benefits of treatment with cholinesterase inhibitors are small[8]
- Cognitive testing can be perceived as humiliating[9]
- Patients may avoid attending the surgery
- Memory clinics may be overwhelmed.

REFERENCES
1 Tsoi KKF, Chan JYC, Hirai HW et al. Cognitive tests to detect dementia: a systematic review and meta-analysis. *JAMA Intern Med* 2015;175:1450-8
2 Brodaty H, Low L, Gibson L, Burns K. What is the best dementia screening instrument for general practitioners to use? *Am J Geriatr Psychiatry* 2006;14:391-400
3 Ballard C, Burns A, Corbett A et al. Helping you to assess cognition. A practical toolkit for physicians. Alzheimer's Society and Department of Health. 2015
4 Alzheimer's Society. Dementia UK. London. 2007
5 NHS England. Enhanced Service Specification. Dementia identification scheme. NHS. Leeds. 2014
6 Strachan MWJ, Price JF, Frier BM. Diabetes, cognitive impairment and dementia. *BMJ* 2008;336:6
7 Boustani M, Callahan CM, Unverzagt FW et al. Implementing a screening and diagnosis program for dementia in primary care. *J Gen Intern Med* 2005;20:572-7
8 Kaduszkiewicz H, Zimmermann T, Beck-Bornholdt HP, van den Bussche H. Cholinesterase inhibitors for patients with Alzheimer's disease: systematic review of randomised clinical trials. *BMJ* 2005;331:321-7
9 Chouliaras L, Topiwala A, Cristescu T, Ebmeier K. Establishing the cause of memory loss in older people. *Practitioner* 2015;259:15-19

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